



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,154	07/10/2001	Heung-Soo Kim	Q63315	5810

7590 03/09/2005

SUGHRUE, MION, ZINN,  
MACPEAK & SEAS, PLLC  
2100 Pennsylvania Avenue, NW  
Washington, DC 20037-3213

EXAMINER
----------

TON, ANTHONY T

ART UNIT	PAPER NUMBER
----------	--------------

2661

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/901,154

Applicant(s)

KIM, HEUNG-SOO

Examiner

Anthony T Ton

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-23 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

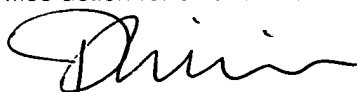
**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



PHIRIN SAM

PRIMARY EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4 IDSs.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.



**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 2, 9-12, 15, 18-20, 22 and 23** are rejected under 35 U.S.C. 102(e) as being anticipated by *McHale et al.* (US Patent No. 6,385,203) hereinafter referred to as *McHale*.

a) **In Regarding to Claim 1:** *McHale* disclosed a modem (*see Fig.1: communication server 58 (a modem)*) comprising:

a first interface interfacing with a subscriber terminal (*see Figs.10A and 10B: Line Interface block 500 (a first interface); and Fig.1: subscribers 12*);

a second interface interfacing with a switching system (*see Fig.12: Network Interface/Multiplexer block 622 (a second interface); and Fig.1: Router or other network device (a switching system)*);

a detector detecting a communication connection status with the subscriber terminal and outputting a detection result signal (*see Figs.10A and 10D: Detector block 508*); and

a controller processing data communication between the subscriber terminal and the switching system (*see Figs.10A and 10C: Controller block 80*), and controlling the second interface to terminate operations of the second interface if a non-connection signal is inputted from the detector (*see Fig.9: steps 408 and 412-416; col.2 lines 46-58; and col.20 lines 6-11*).

**b) In Regarding to Claim 2:** *McHale* further disclosed the detector detects whether a signal is transmitted to the first interface from the subscriber terminal (*see Fig.10D: the detector 508 coupled to the line interface (the first interface) via bus 506, both receiver circuit 550 and service request detector 552 would determine whether a signal is transmitted to the first interface from a subscriber terminal 12*), and outputs the non-connection signal if a non-transmission status of the signal lasts for a predetermined time period (*see Fig.9: step 408 Timeout? and step 414 Decouple Data Line from Modem; and col.26 line 67- col.27 line 8*).

**c) In Regarding to Claim 9:** *McHale* further disclosed the second interface stops the generation of a signal that maintains a channel with the switching system if an operation stop signal is inputted from the controller (*see Fig.12: see the coupling between Modem Pool 620, Network Interface 622 and Controller 612*).

**d) In Regarding to Claim 10:** *McHale* further disclosed the modem further comprising a switching device mounted on a path between the second interface and a power supply, wherein the controller controls the switching device to be transited to the off position if the non-connection signal is inputted (*see Fig.15: Network Interface 714 (second interface) and block 712 (power supply and inherently a switching device coupled to the network interface); block 708 (controller)*).

**e) In Regarding to Claim 11:** *McHale* disclosed a modem, comprising:

- a first interface interfacing with a subscriber terminal (*see described in claim 1*);
- a second interface interfacing with a switching system (*see described in claim 1*);
- a controller processing a data communication between the subscriber terminal and the switching system (*see the described in claim 1*);

a detector detecting a communication connection status with the subscriber terminal, and outputting a connection signal or a non-connection signal according to the detection result (*see the described in claim 1*); and

switching device transiting on and off a supply of electric power to the second interface from a power supply according to an input of the connection signal or the non-connection signal (*see Fig.15: Network Interface 714 (second interface) and block 712 (power supply and inherently a switching device coupled to the network interface); block 708 (controller)*).

f) **In Regarding to Claim 12:** *McHale* further disclosed the detector detects whether a signal is transmitted to the first interface from the subscriber terminal (*see the described in claim 2*), and outputs the non-connection signal if a non-transmission status of the signal lasts for a predetermined time period (*see the described in claim 2*).

g) **In Regarding to Claim 15:** *McHale* further disclosed the first interface interfaces with the subscriber terminal in one of Ethernet, Universal Serial Bus (USB), Phoneline Network Alliance (PNA), Bluetooth, wireless LAN, and home RF Protocol (*see Fig.17: Ethernet*).

h) **In Regarding to Claim 18:** *McHale* disclosed a modem, comprising:  
a first interface interfacing with a subscriber terminal (*see the described in claim 1*);  
a second interface interfacing with a switching system (*see the described in claim 1*);  
a controller processing a data communication between the subscriber terminal and the switching system(*see the described in claim 1*); and

a detector detecting a communication connection status with the subscriber terminal, and outputting one of a connection signal and a non-connection signal according to the detection result (*see the described in claim 1*),

wherein the second interface stops the operation thereof if the non-connection signal is inputted from the detector and releases a communication channel with the switching system (*see col.2 lines 46-58; and col.20 lines 3-23*).

i) **In Regarding to Claims 19, 20 and 23:** the claimed subject matters of these claims are the same as that of claims 1, 2 and 9, respectively. Therefore, the rejections to the claims 1, 2 and 9 would apply to reject these claims in a method as taught.

j) **In Regarding to Claim 22:** *McHale* further disclosed the terminating step terminates a supply of electric power to the second interface (*see Fig.9: steps 408 and 412-416; col.2 lines 46-58; and col.20 lines 6-11*).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3, 5-8, 13 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over *McHale et al.* (US Patent No. 6,385,203).

a) **In Regarding to Claim 3:** *McHale* disclosed all subject matters of this claim as set forth in claims 1 and 2.

*McHale* fails to explicitly disclose the detector detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period.

However, *McHale* obviously disclosed a detector which detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period because *McHale* has explicitly disclosed a logic and timing circuitry that contains timing and synchronization and other appropriate digital processing circuitries to produce data signal on received data and corresponding clock signal on a clock line for delivery, and *McHale* further disclosed a profile information stored in a non-volatile memory maintained by the system controller or other device external to a XDSL transceiver unit performing a training sessions on twisted pair line at a variety of bands and rates (speeds) to generate the profile information (connection or non-connection information) (see Fig.5: block 178, Logic and Timing Circuitry, col.3 lines 11-27; and col.13 lines 50-58).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a detector detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period with *McHale* in a purpose of detecting the current state of coupling between a communication modem and a subscriber terminal. The motivation for doing so would have been to maintain profile information for or more twisted pair lines coupled to a XDSL transceiver unit (see

*McHale: col.3 lines 11-14*). Therefore, it would have been obvious to combine such a detector with *McHale* in the invention as specified in the claim.

**b) In Regarding to Claim 5:** *McHale* further disclosed the first interface interfaces with the subscriber terminal in one of Ethernet, Universal Serial Bus (USB), Phoneline Network Alliance (PNA), Bluetooth, wireless LAN, and home RF Protocol (*see Fig.17: Ethernet*).

**c) In Regarding to Claim 6:** *McHale* further disclosed the first interface includes: a matching circuit unit matching an impedance with respect to a communication interface with the subscriber terminal (*see col.3 lines 3-11*); and

an Ethernet transceiver transmitting and receiving an Ethernet data packet with the subscriber terminal (*see Fig.3: transceiver 108; and col.6 lines 26-42: Ethernet*).

**d) In Regarding to Claim 7:** *McHale* further disclosed the switching system is an ATM switching system, and the second interface has a modem signal processor that converts a received ATM cell to fit in a frame format required by one of the controller and the ATM switching system, said second interface outputting the converted ATM cell to a corresponding transmission path (*see Fig.17: ATM, and col.6 lines 26-56*), said second interface comprising:

a modem signal transmission/reception unit converting a digital signal received from the modem signal processor into an analog signal and outputting the analog signal to the ATM switching system (*see Fig.10A: 510 and 78; and Fig.17: ATM based transport communication protocols supported on network interface of the communication server (modem)*), and

converting an analog signal received from the ATM switching system to a digital signal and outputting the digital signal to the modem signal processor (*see Fig.12: block A/D and D/A*



*Converter; and see col.26 lines 1-18 and Fig.17: ATM based transport communication protocols supported on network interface of the communication server).*

**e) In Regarding to Claim 8:** *McHale* disclosed all subject matters of this claim as set forth in claim 1.

*McHale* fails to explicitly disclose the modem further comprising a connector disposed in an inlet groove of a main body to connect a communication cable extended from the subscriber terminal to the first interface, wherein the detector is mounted in the inlet groove that communicates with the communication cable as the communication cable is matched to the connector, and detects a communication connection status of the subscriber terminal.

However, such a connector disposed in an inlet groove of a main body to connect a communication cable extended from the subscriber terminal to the first interface, wherein the detector is mounted in the inlet groove that communicates with the communication cable as the communication cable is matched to the connector, and detects a communication connection status of the subscriber terminal is a design choice because a connector disposed in an inlet groove of a main body to connect a communication cable extended from the subscriber terminal to the first interface is relating to a skill in mechanical for firmly mounted electronic devices such as light-emitting diodes (detectors) in an inlet groove. The motivation for doing so would have been to provide a firmly installation to electronic devices on a subscriber terminal. Therefore, it would have been obvious to combine such a connector with *McHale* in the invention as specified in the claim.

**f) In Regarding to Claim 13:** *McHale* disclosed all subject matters of this claim as set forth in claims 11 and 12.

*McHale* fails to explicitly disclose the detector detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period.

However, *McHale* obviously disclosed a detector which detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period because *McHale* has explicitly disclosed a logic and timing circuitry that contains timing and synchronization and other appropriate digital processing circuitries to produce data signal on received data and corresponding clock signal on a clock line for delivery, and *McHale* further disclosed a profile information stored in a non-volatile memory maintained by the system controller or other device external to a XDSL transceiver unit performing a training sessions on twisted pair line at a variety of bands and rates (speeds) to generate the profile information (connection or non-connection information) (see Fig.5: block 178, Logic and Timing Circuitry, col.3 lines 11-27; and col.13 lines 50-58).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a detector detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period with *McHale* in a purpose of detecting the current state of coupling between a communication modem and a subscriber terminal. The motivation for doing so would have been to maintain profile information for or more twisted pair lines coupled to a XDSL transceiver unit (see

*McHale: col.3 lines 11-14*). Therefore, it would have been obvious to combine such a detector with *McHale* in the invention as specified in the claim.

**g) In Regarding to Claim 21:** *McHale* disclosed all subject matters of this claim as set forth in claim 19.

*McHale* fails to explicitly disclose the judging step detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period.

However, *McHale* obviously disclosed a judging step which detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined time period because *McHale* has explicitly disclosed a logic and timing circuitry that contains timing and synchronization and other appropriate digital processing circuitries to produce data signal on received data and corresponding clock signal on a clock line for delivery, and *McHale* further disclosed a profile information stored in a non-volatile memory maintained by the system controller or other device external to a XDSL transceiver unit performing a training sessions on twisted pair line at a variety of bands and rates (speeds) to generate the profile information (connection or non-connection information) (see Fig.5: block 178, Logic and Timing Circuitry, col.3 lines 11-27; and col.13 lines 50-58).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a judging step detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if

Art Unit: 2661

the non-input status of the synchronization signal lasts for a predetermined time period with *McHale* in a purpose of detecting the current state of coupling between a communication modem and a subscriber terminal. The motivation for doing so would have been to maintain profile information for or more twisted pair lines coupled to a XDSL transceiver unit (*see McHale: col.3 lines 11-14*). Therefore, it would have been obvious to combine such a detector with *McHale* in the invention as specified in the claim.

5. **Claims 4, 14, 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over *McHale et al.* (US Patent No. 6,385,203) in view of *Bhatia et al.* (US Patent No. 6,023,724) (a prior art in an IDS, filed on 3/5/04, provided by the Applicant) hereinafter referred to as *Bhatia*.

a) **In Regarding to Claim 4:** *McHale* disclosed all subject matters of this claim as set forth in claims 1-3.

*McHale* fails to explicitly disclose the modem further comprising a light-emitting device mounted on an exterior of a main body, indicating a connection status; and a switching device transiting on and off electric power transmitted from a power supply to the light-emitting device, wherein the switching device drives the transiting of the light-emitting device in correspondence with a signal outputted from the detector.

*Bhatia* explicitly disclosed such a light-emitting device indicating a connection status (*see Fig.3: Display Latch on block 334 and LEDs; and col.17 lines 36-39*); and

*Bhatia* obviously disclosed a switching device transiting on and off electric power transmitted from a power supply to the light-emitting device, wherein the switching device drives the transiting of the light-emitting device in correspondence with a signal outputted from

the detector (*see Fig.4B: LED driver 490 (switching device) and col.14 lines 19-24: the LAN modem contains conventional power supply*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a switching device transiting on and off electric power transmitted from a power supply to the light-emitting device, wherein the switching device drives the transiting of the light-emitting device in correspondence with a signal outputted from the detector, as taught by *Bhatia* with *McHale* in a purpose of controlling both a power supply of LEDs and driving the LEDs in an on/off state. The motivation for doing so would have been to provide an indication of a current status information in a communication modem (*see Bhatia: col.17 lines 36-39*). Therefore, it would have been obvious to combine *Bhatia* with *McHale* in the invention as specified in the claim; and

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a light-emitting device indicating a connection status, as taught by *Bhatia* with *McHale* so that any connection or non-connection between a communication modem and a switching network or a router can be obviously viewed on an appropriate light-emitting diode. The motivation for doing so would have been to provide an indication of a current status information in a communication modem (*see Bhatia: col.17 lines 36-39*). Therefore, it would have been obvious to combine *Bhatia* with *McHale* in the invention as specified in the claim.

**b) In Regarding to Claim 14:** *McHale* disclosed all subject matters of this claim as set forth in claims 11 and 12.

*McHale* fails to explicitly disclose the modem further comprising a light-emitting device mounted on an exterior of a main body, indicating a connection status; and a switching device

transiting on and off electric power transmitted from a power supply to the light-emitting device, wherein the switching device drives the transiting of the light-emitting device in correspondence with a signal outputted from the detector.

*Bhatia* explicitly disclosed such a light-emitting device indicating a connection status (see Fig.3: Display Latch on block 334 and LEDs; and col.17 lines 36-39); and

*Bhatia* obviously disclosed a switching device transiting on and off electric power transmitted from a power supply to the light-emitting device, wherein the switching device drives the transiting of the light-emitting device in correspondence with a signal outputted from the detector (see Fig.4B: LED driver 490 (switching device) and col.14 lines 19-24: the LAN modem contains conventional power supply).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a switching device transiting on and off electric power transmitted from a power supply to the light-emitting device, wherein the switching device drives the transiting of the light-emitting device in correspondence with a signal outputted from the detector, as taught by *Bhatia* with *McHale* in a purpose of controlling both a power supply of LEDs and driving the LEDs in an on/off state. The motivation for doing so would have been to provide an indication of a current status information in a communication modem (see *Bhatia*: col.17 lines 36-39). Therefore, it would have been obvious to combine *Bhatia* with *McHale* in the invention as specified in the claim; and

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a light-emitting device indicating a connection status, as taught by *Bhatia* with *McHale* so that any connection or non-connection between a communication modem and a

switching network or a router can be obviously viewed on an appropriate light-emitting diode. The motivation for doing so would have been to provide an indication of a current status information in a communication modem (*see Bhatia: col.17 lines 36-39*). Therefore, it would have been obvious to combine *Bhatia* with *McHale* in the invention as specified in the claim.

**c) In Regarding to Claim 16:** *McHale* further disclosed the first interface includes:

a matching circuit unit matching an impedance with respect to a communication interface with the subscriber terminal (*see col.3 lines 3-11*); and

an Ethernet transceiver transmitting and receiving an Ethernet data packet with the subscriber terminal (*see Fig.3: transceiver 108; and col.6 lines 26-42: Ethernet*).

**d) In Regarding to Claim 17:** *McHale* further disclosed the switching system is an ATM switching system, and the second interface has a modem signal processor that converts a received ATM cell to fit in a frame format required by one of the controller and the ATM switching system, said second interface outputting the converted ATM cell to a corresponding transmission path (*see Fig.17: ATM, and col.6 lines 26-56*), said second interface comprising:

a modem signal transmission/reception unit converting a digital signal received from the modem signal processor into an analog signal and outputting the analog signal to the ATM switching system (*see Fig.10A: 510 and 78; and Fig.17: ATM based transport communication protocols supported on network interface of the communication server (modem)*), and converting an analog signal received from the ATM switching system to a digital signal and outputting the digital signal to the modem signal processor (*see Fig.12: block A/D and D/A Converter; and see col.26 lines 1-18 and Fig.17: ATM based transport communication protocols supported on network interface of the communication server*).

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The examiner can normally be reached on M-F: 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chau Nguyen** can be reached on **571-272-3126**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by: *Atk*  
Anthony T. Ton  
Patent Examiner  
March 07, 2005.

  
**PHIRIN SAM**  
**PRIMARY EXAMINER**